

INVESTIGATOR'S ANNUAL REPORT

National Park Service

All or some of the information provided may be available to the public

Reporting Year: 1991	Park: Shenandoah NP
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Permit#: SHEN1991ABBN	
Park-assigned Study Id. #: unknown	
Project Title: Genetic Variation and Pollen-Mediated Gene Dispersal in Poke Milkweed, <i>Asclepias exaltata</i>	
Permit Start Date: Jan 01, 1998	Permit Expiration Date Jan 01, 1998
Study Start Date: Jan 01, 1990	Study End Date Jan 01, 1991
Study Status: Completed	
Activity Type: Other	
Subject/Discipline: Ecology (Aquatic, Marine, Terrestrial)	
Objectives: 1. To investigate levels of genetic variation within and among natural populations of poke milkweed (<i>Asclepias exaltata</i>).;2. To examine levels of pollen-mediated gene flow among populations of <i>Asclepias exaltata</i> .	
Findings and Status: High levels of genetic variation were detected from the 13 polymorphic loci examined ($HT = 0.262$). Over 90% of the total genetic variation was partitioned within populations ($GST = 0.098$). A paternity exclusion analysis performed on 2,892 seeds from 241 fruits collected from these populations indicates that the rate of pollen mediated gene flow is high. Pollen-mediated gene flow ranged from a low of 29% at Fisher's Gap to a high of 50% in the Lewis Mountain populations. On average, 34.8% of the seeds produced in these populations were sired by individuals located outside the reference population. Clearly, these data are consistent with the view that the pollination system of milkweeds promotes high levels of gene flow and low levels of genetic differentiation between populations.;In addition, two (0.8%) fruits contained seeds that were sired by a sympatric congeneric species, <i>Asclepias syriaca</i> . These hybrid seeds contained several diagnostic alleles for <i>A. syriaca</i> . This level of hybridization between these two species is consistent with our previous studies which suggests that hybridization is common throughout their ranges.	
For this study, were one or more specimens collected and removed from the park but not destroyed during analyses? No	
Funding provided this reporting year by NPS: 0	Funding provided this reporting year by other sources: 5000
Fill out the following ONLY IF the National Park Service supported this project in this reporting year by providing money to a university or college	
Full name of college or university:	Annual funding provided by NPS to university or college this reporting year:

n/a	0
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